

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

1. (Currently Amended) A power output apparatus that outputs power to a drive shaft, said power output apparatus comprising:
 - an internal combustion engine;
 - an electric power-mechanical power input-output module that is linked with an output shaft of said internal combustion engine and with said drive shaft and outputs at least part of power from said internal combustion engine to said drive shaft through inputs and outputs of electric power and mechanical power;
 - a motor that is capable of inputting and outputting power from and to said drive shaft;
 - an accumulator that is capable of supplying and receiving electric power to and from said electric power-mechanical power input-output module and said motor;
 - an inverter coupled between the accumulator and the motor to transmit the electric power therebetween;
 - a power demand setting module that sets a power demand required to said drive shaft, in response to an operator's manipulation;
 - a target power setting module that sets a target power to be output from said internal combustion engine, based on the setting of the power demand;
 - a drive restriction effectuation module that, when a predetermined restricting condition is fulfilled, effects a drive restriction of said motor based on the predetermined restricting condition;
 - a correction module that corrects the setting of the target power based on the effected drive restriction, when the drive restriction of said motor is effected by said drive restriction effectuation module; and

a control module that executes normal control of controlling said internal combustion engine, said electric power-mechanical power input-output module, and said motor in the case of no effectuation of the drive restriction of said motor by said drive restriction effectuation module to ensure output of the target power from said internal combustion engine and output of a power corresponding to the setting of the power demand to said drive shaft, said control module executing restriction control of controlling said internal combustion engine, said electric power-mechanical power input-output module, and said motor in the case of effectuation of the drive restriction of said motor by said drive restriction effectuation module to ensure output of the corrected target power from said internal combustion engine and output of a power in a range of the effected drive restriction from said motor;

wherein the predetermined restricting condition is fulfilled when a temperature of said motor is not less than an upper limit motor temperature set to ensure continuous actuation of said motor or when a temperature of the inverter which drives said motor is not less than an upper limit inverter temperature set to ensure continuous actuation of said motor;

wherein, when executing the restriction control during a predetermined light load state, said control module changes a charge-discharge electric power of said accumulator, used to charge said accumulator or obtained by discharging said accumulator, while maintaining a constant engine torque, and

wherein, when executing the restriction control during a predetermined heavy load state, said control module changes the charge-discharge electric power of said accumulator while maintaining a constant power demand of said engine.

2. (Original) A power output apparatus in accordance with claim 1, said power output apparatus further comprising:

a charge-discharge electric power measurement module that measures a charge-discharge electric power used to charge said accumulator or obtained by discharging said accumulator; and

an electric power demand setting module that sets an electric power demand for charging or discharging said accumulator, based on a predetermined charge-discharge condition,

wherein said correction module corrects the setting of the target power to cancel a difference between the charge-discharge electric power measured by said charge-discharge electric power measurement module and the electric power demand set by said electric power demand setting module.

3. (Original) A power output apparatus in accordance with claim 1, wherein said target power setting module specifies a target torque and a target revolution speed to set the target power, and

said correction module varies the specified target revolution speed to correct the target power.

4. (Canceled)

5. (Currently Amended) A power output apparatus that outputs power to a drive shaft, said power output apparatus comprising:

an internal combustion engine;

an electric power-mechanical power input-output module that is linked with an output shaft of said internal combustion engine and with said drive shaft and outputs at least part of power from said internal combustion engine to said drive shaft through inputs and outputs of electric power and mechanical power;

a motor that is capable of inputting and outputting power from and to said drive shaft;

an accumulator that is capable of supplying and receiving electric power to and from said electric power-mechanical power input-output module and said motor;

an inverter coupled between the accumulator and the motor to transmit the electric power therebetween; and

a control module that sets a power demand required to said drive shaft in response to an operator's manipulation and sets a target power to be output from said internal combustion engine based on the setting of the power demand, said control module controlling said internal combustion engine, said electric power-mechanical power input-output module, and said motor in the case of no fulfillment of a predetermined restricting condition to ensure output of the target power from said internal combustion engine and output of a power corresponding to the power demand to said drive shaft, in the case of fulfillment of the predetermined restricting condition, said control module effecting a drive restriction of said motor based on the predetermined restricting condition, correcting the setting of the target power based on the effected drive restriction, and controlling said internal combustion engine, said electric power-mechanical power input-output module, and said motor to ensure output of the corrected target power from said internal combustion engine and output of a power in a range of the effected drive restriction from said motor;

wherein the predetermined restricting condition is fulfilled when a temperature of said motor is not less than an upper limit motor temperature set to ensure continuous actuation of said motor or when a temperature of the inverter which drives said motor is not less than an upper limit inverter temperature set to ensure continuous actuation of said motor,

wherein, when executing the restriction control during a predetermined light load state, said control module changes a charge-discharge electric power of said accumulator, used to charge said accumulator or obtained by discharging said accumulator, while maintaining a constant engine torque, and

wherein, when executing the restriction control during a predetermined heavy load state, said control module changes the charge-discharge electric power of said accumulator while maintaining a constant power demand of said engine.

6. (Previously Presented) A power output apparatus in accordance with claim 1, wherein said electric power-mechanical power input-output module comprises:

a three-shaft power input-output assembly that is connected with three shafts, that is, said output shaft of said internal combustion engine, said drive shaft, and a third shaft, and specifies input and output of power from and to one residual shaft among said three shafts, based on powers input and output from and to two shafts among said three shafts; and

a generator that inputs and outputs power from and to said third shaft.

7. (Previously Presented) A power output apparatus in accordance with claim 1, wherein said electric power-mechanical power input-output module comprises a pair-rotor generator having a first rotor, which is linked with the output shaft of said internal combustion engine, and a second rotor, which is linked with said drive shaft and rotates relative to the first rotor, said pair-rotor generator outputting at least part of the power from said internal combustion engine to said drive shaft through input and output of electric power by electromagnetic interaction between the first rotor and the second rotor.
8. – 14.(Canceled)
15. (Currently Amended) A control method for a power output apparatus, which comprises: an internal combustion engine; an electric power-mechanical power input-output module that is linked with an output shaft of said internal combustion engine and with a drive shaft and outputs at least part of power from said internal combustion engine to said drive shaft through inputs and outputs of electric power and mechanical power; a motor that is capable of inputting and outputting power to and from said drive shaft; an accumulator that is capable of supplying and receiving electric power to and from said electric power-mechanical power input-output module and said motor, and an inverter coupled between the accumulator and the motor to transmit the electric power therebetween,
said control method comprising the steps of:
(a) setting a power demand required to said drive shaft, in response to an operator's manipulation;

(b) setting a target power to be output from said internal combustion engine, based on the setting of the power demand;

(c) when a predetermined restricting condition is fulfilled, effecting a drive restriction of said motor based on the predetermined restricting condition;

(d) correcting the setting of the target power based on the effected drive restriction, in the case of effectuation of the drive restriction of said motor; and

(e) controlling said internal combustion engine, said electric power-mechanical power input-output module, and said motor in the case of no effectuation of the drive restriction of said motor to ensure output of the target power from said internal combustion engine and output of a power corresponding to the setting of the power demand to said drive shaft, while controlling said internal combustion engine, said electric power-mechanical power input-output module, and said motor in the case of effectuation of the drive restriction of said motor to ensure output of the corrected target power from said internal combustion engine and output of a power in a range of the effected drive restriction from said motor;

wherein the predetermined restricting condition is fulfilled when a temperature of said motor is not less than an upper limit motor temperature set to ensure continuous actuation of said motor or when a temperature of the inverter which drives said motor is not less than an upper limit inverter temperature set to ensure continuous actuation of said motor,

wherein, when executing the restriction control during a predetermined light load state, a charge-discharge electric power of said accumulator, used to charge said accumulator or obtained by discharging said accumulator, is changed while maintaining a constant engine torque, and

wherein, when executing the restriction control during a predetermined heavy load state, the charge-discharge electric power is changed while maintaining a constant power demand of said engine.

16. (Currently Amended) A control method in accordance with claim 15, said control method further comprising, prior to said step (d), the steps of :

(f) measuring ~~[[a]] the~~ charge-discharge electric power used to charge said accumulator or obtained by discharging said accumulator; and

(g) setting an electric power demand for charging or discharging said accumulator, based on a predetermined charge-discharge condition,

wherein said step (d) corrects the target power to cancel a difference between the observed charge-discharge electric power and the setting of the electric power demand.

17. (Canceled)

18. (Canceled)